

2002 Enroute Work Group

Problem Statement: Existing technology and procedures to manage en route demand during periods of constraint are inefficient.

Objectives for 2002:

- Find the technology, procedures, processes, or combination of these that will allow us to do differently in 2002 that in 2001.
- A primary objective among these is to replace using ground delay programs in support of SWAP.
- Develop universal situational awareness in all aspects of the process.

Areas that need to be worked:

- Explore existing tools to see if their functionality can be expanded to fit into the concept design.
- Determine and define what can be developed and delivered by April 2002 and on what scale.
- Lay out milestones and identify essential people.

Longer Term Objectives, Concepts, and Characteristics to Keep in Mind

Objectives:

- Enhance system predictability
- Interactive tools and methods to identify system constraints, alternatives and provide the user the opportunity to make economic decisions. *(An environment where dispatchers and system operators can file a flight plan querying the health of the NAS that will provide feedback on their route request and alternatives. Once they make decisions, they can lock in the routes thus providing a incentive for early intent filing and supporting our need for timely and accurate data.)*
- Develop interactive tool based on timely and accurate flight plan data and system capacity that will allocate the available airspace resource in an efficient and equitable manner.
- Rationing scheme: How? What is equitable?
- What is the measure of system success? How do we define it from a system perspective?

Concepts:

- Users enter the requested routes in terms of departure airport and arrival airport and departure time. The system identifies sector demand and overload along the requested routes and identifies feasible routes. Output is eventually user picks a route and files it. (Based on first filed first served - provides incentive for user and FAA in terms of more accurate data.)
- Users enter origin, destination, and requested departure time. The tool identifies feasible routes and associated delay along with each route. (Based on first filed first served - provides incentive for user and FAA in terms of more accurate data.)
- Capacity identified by FAA. (NAS focused not individual center focused)
 - FAA identifies which flights to take out using first filed first served concept.
 - FAA issues some measure of delays or reroutes such as SMT / CRCT and we need a union of these tools to assign combination of delay and reroutes. Could also provide user with alternatives in terms of delay or reroute. Using an automated method, we would communicate the "controlled departure time" or necessary reroute to the users. (FSM for Sectors - tools that can determine delay / reroute and/or both. Sort of a Sector ADL. Provides TMC with ability to model options including delay or reroutes options.)

- When system improves - we recover the system with the flights that took delay to reduce demand through that area.

Characteristics:

- Identifies constraint
- Identifies: Causes of constraint -equipment, resources, weather, etc., -time frame of the constraint, options in terms of reroutes and/or delay.
- Provides feedback on impact of operating in this "trouble spot" and "point" to alternatives.
- Ability to identify impacted flights within the area of constraint.
- Compression capability to adjust or recapture enroute slots due to cancellations, etc.
- Tool needs to be set up a NAS tool, not individual center.
- Ability to integrate multiple airport / fixes.
- Collaborative

We identify constraint and amount of available resource / # of aircraft. Concept is based initially up to users to chose the routes and respond to the system constraint. If user action does not resolve the excessive demand within a timely manner, FAA TMIs will be initiated. Penalizes the user that "games" the system and tries to be last through the hole.

Incentive to FAA to identify FCAs increasing predictability.